

✓
Page 12, line 31, delete the word "allows".

✓
Page 13, line 31, change "interactively" to --
iteratively--.

✓
Page 14, line 5, change "interactive" to --iterative--.

✓
Page 16, at the end, insert Appendix I.

✓
Page 16, please insert the title --Appendix I-- at the
top of Appendix I.

✓
Page 16, please number the pages of Appendix I to
conform to the specification and re-number the claims and
abstract to conform with the addition of Appendix I.

In the claims:

✓
Claim 36, line 3, change "objection" to --objective--.

R E M A R K S

1. Claims 1-38 are pending in this application. The drawings have been objected to as not showing every feature of the invention specified in the claims. The appendix has been objected to as not being properly entered. Claims 1-38 have been rejected under 35 U.S.C. §102(e) as being anticipated by U.S. Patent No. 5,903,641 to Tonisson. After a careful review of the claims, it is believed that the rejections are in error and, consequently, the rejections are traversed.

2. The drawings have been objected to as not showing every feature of the invention specified in the claims. In particular, the Examiner asserts that "the selection processor", the "repair processor", the "update processor" and the "objection function processor" must be shown. In response, a proposed corrected FIG. 1 is enclosed showing the selection processor, the repair processor, the update processor and the objection function processor.

Further, a number of errors have been corrected. For example, the equations on page 9, line 14 and on page 10, line 7 have been corrected to conform to the equations shown on page 5 of the appendix. The appendix has also been entered in accordance with MPEP §608.05.

3. Claims 1-38 have been rejected under 35 U.S.C. §102(e) as being anticipated by U.S. Patent No. 5,903,641 to Tonisson. In particular, the Examiner asserts that:

"Tonisson teaches . . . determining a target occupancy matrix including a target occupancy for each agent of the agents of the ACD for each call type of the plurality of call types and processing a call of the first type of the types determined in the target matrix (Col. 2 lines 15-27) . . . assigning the call to an agent of the agents of the ACD with the largest relative difference between an actual occupancy of calls of the first type handled by the agent and the target occupancy of calls of the first type determined for the agent in the target occupancy matrix (Col. 2, lines 27-57)".

A review of Tonisson, however, reveals very little support for the Examiner's assertions.

It is noted first, that Tonisson explicitly states (col. 4, lines 2-9) that "each agent's skills are typically prioritized according to his or her level of expertise in that skill, and either agents are enqueued in individual ones of agent queues 130 in their order of expertise or are enqueued in different ones of a plurality of agent queues that correspond to a skill and each one of which corresponds to a different level of expertise". Further, the "system 101 is configured to assign each call to only one call queue which corresponds to the skill that the call needs the most" (Tonisson, col. 3, line 67 to col. 4, line 2).

If an agent is enqueued in a call queue based upon his/her level of expertise, then he/she would clearly be assigned calls based upon the enqueueing order. Assigning calls based upon a queuing order is clearly different than assigning calls to an agent based upon a relative difference between an actual occupancy and a target occupancy.

For example, a call arriving at such a queue will be assigned to the enqueued agent with the highest level of expertise. If a second call should arrive very shortly after the first call, then it would be assigned to the enqueued agent with the second highest level of expertise. However, if the second

call should arrive after the first call had ended, then the second call would again be assigned to the enqueued agent with the highest level of expertise.

It is noted next, that the Examiner has apparently failed to grasp the writer's intended meaning of the cited sections of Tonisson. For example, col. 2, lines 15-19 states that "Specifically according to the invention, call center agents are automatically assigned to skills in a call center wherein individual calls requiring different skills are handled by a plurality of agents who are individually assigned to different ones of the skills".

Anyone familiar with call centers would understand that a call center agent cannot be "assigned to skills". Skills are something acquired by training or inherent within the subject, but cannot be assigned. A call center supervisor may evaluate and assign (or attribute) a skill to an agent, but an agent would not be assigned to a skill. Since an agent would not be assigned to a skill, a person of skill in the art would be put on notice that something else was meant by the recited phrase. More to the point, when read in conjunction with col. 4, lines 2-9, a person of average skill in the art would clearly recognize that "assigned to skills" in this context would mean assigned to prioritized locations in queues based upon skills. This meaning

is entirely supported by col. 4, lines 2-9 as well as the remainder of Tonissan.

Tonisson states (col. 2, lines 27-30) that "The parameter of actual assignments of the plurality of call center agents to skills preferably is the parameter of actual proportions of work that individual ones of the agents spend handling calls requiring individual ones of the skills". A person of skill in the art would understand "actual assignments" in this context to be the prioritized location of the agent within the queue based upon the agent's skill. The "actual proportions of work that individual ones of the agents spend handling calls requiring individual ones of the skills" would be understood to be the proportion of calls resulting from an assigned prioritized location within the call queue. However, since prioritized location in a queue does not directly result in call assignment, the parameter of actual assignment is not relevant to assignment of calls based upon a difference between a target occupancy and an actual occupancy.

Tonissan states (col. 2, lines 39-42) that "The actual assignments of the plurality of call center to skills are then automatically adjusted to bring the actual assignments closer to the determined optimal assignments". Consistent with the above, a person of skill in the art would understand this sentence to mean that it is the actual prioritized locations of enqueued

agents within the call queues which are then automatically adjusted.

The Examiner next suggests (Office Action, page 5) that there may be some similarity between "Col. 5, lines 11-18 of Tonisson with that of page 7, lines 1-8 of the present application". It is noted in this regard that whatever teachings may be present within col. 5, lines 11-18 of Tonisson are irrelevant because they relate to selection of a prioritized location in a queue. Selection of a prioritized location in a queue is entirely different than assignment of calls based upon differences between a target occupancy and an actual occupancy.

The Examiner next takes the opportunity (Office Action, page 3) to erroneously "note the equations from Col. 6 through Col. 9 and the description thereof with respect to providing a matrix including agent skills, call types, etc.". A review of the cited equations, however, reveals that this suggestion is also without basis.

For example, col. 6, line 26 contains the equation

$$V_s = \sum_{a=1}^m V_{s,a} + A_s.$$
 As would be clear to a person of skill in the art, this equation is simply the summation of all calls V_s obtained by summing the calls " $V_{s,a}$ " of all call types " s " handled by each agent " a " plus the number of abandoned calls

"A_s". This equation clearly does not require the use of a matrix including agent skills, call types, etc.

Col. 6, line 35 contains the equation $\sum_{a=1}^m C_{s,a} \times R_{s,a} = V_s - A_s$

and $R_{s,a} \geq 0$. A person of skill in the art would clearly understand this equation as simply suggesting that the volume of calls entering a skill queue of prioritized agents equals the sum of the total volume of calls of a skill "s" handled by agents "a" minus the volume of calls for that skill "s" which are abandoned.

These equations clearly do not require the use of a matrix including agent skills, call types, etc.

Col. 6, line 41 contains the equation $\sum_{s=1}^n R_{s,a} \leq 1$. A

person of skill in the art would clearly understand that this equation simply suggests that an agent cannot spend a negative proportion of his time on calls. This equation clearly does not require the use of a matrix including agent skills, call types, etc..

Col. 7, lines 26-30 contains the equation

$$B = \sum_{s=1}^n \sum_{a=1}^m B_{s,a} V_{s,a} - \sum_{s=1}^n P_s A_s = \sum_{s=1}^n \sum_{a=1}^m L_{s,a} R_{s,a} - \sum_{s=1}^n P_s A_s .$$

A person of skill in the art would clearly understand this equation as the simple summation of quantities (i.e., benefit "B_{s,a}" times volume of calls "V_{s,a}" minus a penalty "P_s" times the number of abandoned

calls "A_s") resulting in a relative measure of overall efficiency B of the call center based upon enqueueing priority. This equation clearly does not require the use of a matrix including agent skills, call types, etc.

Col. 8, line 1 contains the expression $\frac{b}{m} \frac{s}{1-p}$ and

$b \frac{b}{1-p}$. These equations are clearly a waiting time in a queue and

a value proportional to the average number of calls in a queue, respectively. These equation does not require the use of a matrix including agent skills, call types, etc.

Col. 8, lines 39-46 contains the equations

$$B = \sum_{s=1}^n \sum_{a=1}^m L_{s,a} R_{s,a} - P_s A_s, \text{ subject to } \sum_{a=1}^m C_{s,a} R_{s,a} = V_s - A_s \text{ and } \sum_{s=1}^n R_{s,a} \leq 1.$$

Tonisson clearly suggests (col. 8, lines 49-52) that this is simply a method of calculating a benefit of the enqueueing priority based upon a measure of benefit "L_{s,a}" for a type of call "s" handled, times a ratio "R_{s,a}" of calls, minus a penalty "P_s", times a rate of abandoned calls "A_s". This equation has an exact solution and is solved by using the Simplex Algorithm. These equations clearly do not require the use of a matrix including agent skills, call types, etc.

Col. 9, lines 9-10 contains the equation

$$B = \sum_{s=1}^n \sum_{a=1}^m W_s L_{s,a} R_{s,a} - \sum_{s=1}^n P_s A_s. \text{ A person of skill in the art would}$$

clearly recognize this equation as simply a weighting function used for calculating a benefit of the enqueueing priority based upon a weighting factor " W_s " for a type of call " s " handled, times a benefit " L_s " for the call, times the ratio " $R_{s,a}$ " of calls handled, minus a penalty " P_s " for the call handled, times a number " A_s " of abandoned calls. This equation clearly do not require the use of a matrix including agent skills, call types, etc.

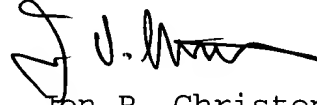
As demonstrated above, Tonisson uses an enqueueing priority for assigning calls. The use of an enqueueing priority for assigning calls is entirely different than assigning calls based upon a relative difference between an actual occupancy and a target occupancy. Since Tonisson uses a different method, Tonisson does not do exactly the same thing in exactly the same way as the claimed invention. Since Tonisson does not do exactly the same thing in exactly the same way, the rejections is believed to be improper and should be withdrawn.

4. For the foregoing reasons, allowance of claims 1-38 as now presented, is believed to be in order and such action is earnestly solicited. Should the Examiner be of the opinion that a telephone conference would expedite prosecution of the subject application, he is respectfully requested to telephone applicant's undersigned attorney.

Respectfully submitted,

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By



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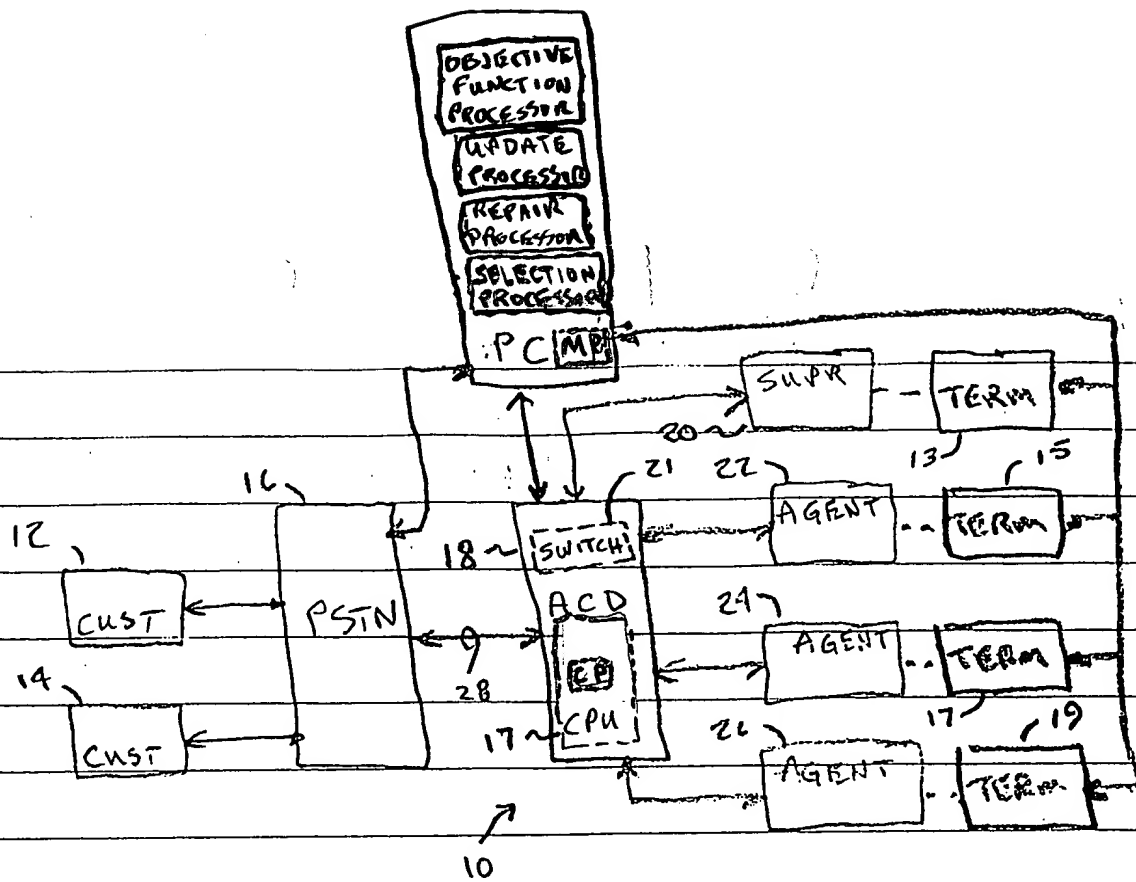


FIG. 1